

A case study on using the endogamy effect to find distant cousins.

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1. Introduction

1.1 Terry Dewey, who lives in Dorset England, has researched over several decades to find a connection between his Dewey family, whose roots are in Wiltshire and the early settler to America, Thomas Dewey known as Thomas Dewey The Settler (TDTS). Evidence shows that he was baptised 20 Dec 1606 at Hinton Martell, Dorset. Terry now believes he has found proof (beyond reasonable doubt) of that connection based on DNA evidence only made possible by the endogamy effect. For further details on the research and the justification for the conclusions please see Terry's website:- <https://www.deweywiltshireroots.org.uk>.

1.2 From the International Society of Genetic Genealogy (ISOGG) website <https://isogg.org/wiki/Endogamy>, "*Endogamy is the practice of marrying within the same ethnic, cultural, social, religious or tribal group...is also a problem in early Colonial American populations...relationships will often be more distant than predicted*". When distant cousins are being searched for endogamy can become a benefit rather a problem because the effect of endogamy is to 'boost' a distant cousin's DNA. This means that potential cousins appear to be closer related than they really are and so come within the limits of a detectable DNA match, e.g. a 10th cousin could be a DNA match because their DNA has been boosted to the level of an 8th cousin, or closer.

1.3 This case study relates to the use of Ancestry's DNA product which provides DNA matches up-to and including 8th cousins. The few matches (about 30) of distant, DNA boosted, cousins are mixed in with a dataset also containing a huge number (for Terry 29,000+ matches) of non-endogenous 5th to 8th cousins. The task is then to identify the few specific individuals of interest i.e. the descendants of TDTS, within this large dataset. Ancestry provides a search tool with modifiable filters, which can be set up so that these individuals can be identified.

2. Endogamy within the Dewey family in Westfield CT

2.1 The reasons to expect a significant endogamy effect in Westfield are:-
a) Westfield would probably have been more isolated than other settlements such as Windsor, Springfield and Northampton, because it is on a small tributary of the Connecticut river; whereas the others are all on the main part of the Connecticut river. Westfield would have had a lower footfall of visitors, and so fewer outsiders joining their community. It is almost inevitable that a prosperous and growing settlement would have some inbreeding between cousins, at some level.
b) When George Phelps married TDTS's widow Frances, the joint family including TDTS's children moved to the recently settled Westfield. The original settlers of Westfield were only a small group, so the Dewey family would have been predominant. From WikiTree, TDTS had 6 children, about 40 grandchildren, about 200 great-grandchildren and about 1000 2*great-grandchildren!

2.2 To find evidence of the descendants of TDTS marrying within the family, the WikiTree tool, 'Descendant Tree', was used on his profile, <https://www.wikitree.com/wiki/Dewey-54#Descendants>; WikiTree identifies a specific individual by his surname followed by a number, e.g. TDTS's identifier is 'Dewey-54'.

Only the closest descendants have been looked at so far, with the following results:-
a) First cousins marrying:-

a.1) Abigail Dewey-66, married Thomas Dewey-664; Abigail is the daughter of Thomas Dewey-25, who is a son of TDTS; Thomas-664 is the son of Jedediah Dewey-84, who is also a son of TDTS. Therefore Abigail and Thomas are double 1st cousins.

a.2) Moses Dewey-39 b1715 and Sarah Dewey-2475 b1714

b) Second cousins marrying:-

b.1) Abigail Dewey-43 b1703 and Charles Dewey-1242 b1703

b.2) Ester Dewey-1614 b1763 and Solomon Dewey-3435 b1758

b.3) Adijah Dewey-51 b1693 and Mary Ashley-448 b1695

c) A more complex relationship:-

Another example from TDTS's 'descendant tree' is where TDTS's son Jedediah Snr has 2 sons, Jedediah Jr (who had a son Martin) and James Dewey. James married his 1st cousin, Elizabeth Ashley b1697, so are 'double cousins'. They had two daughters, Elizabeth Dewey and Anne Dewey, so Martin is their 1st cousin. Now the complex bit - both daughters married Martin! Elizabeth had 6 children by him before dying, Anne had another 2. So these 8 children are descended from treble (?) cousins. The 8 children went on to have at least 25 children according to WikiTree profiles; these 25 children are 4 generations down from TDTS, but some are likely to have DNA nearer to 2 generations down.

These examples are likely to be just the tip of the iceberg as many more cousins will probably marry over the next century or so. From 2nd through to 9th or 10th cousins, the effect will reduce, but as the number of such remote cousins increases, then the effect will be more widespread.

Sources for data on WikiTree profiles were used as is, the data was not evaluated any further; the presumption, based on knowledge of WikiTree's standards, is that any errors will be low in number and so the overall result will still be valid.

3. Needle in a hay-stack search: The search for distant cousins was carried out using Ancestry's tool to search for DNA matches. Two filters were set-up; one for a specific surname, the other for a specific location in a match's family tree. This search was carried out on three datasets of DNA matches; the dataset for Terry, his uncle Norman, and his son Brian

3.1 DNA matches with surname Dewey and location Westfield MA in their family tree:-

	TMDGENES	cM	Norman Dewey	cM	Brian Dewey	cM
1	D.C.	15	Denise Hayes	17	MartiWalsh8648	12
2	Kathleen Crews	14	Theresa Meyer	16	Kathleen Crews	14
3	merryelder99	13	C.A.	15	lisadennis29	12
4	ezdaze1	13	Murray_Milne	14	V.R.	9
5	LindaWolf96	13	ellizann	11	Cameo_Garrick	9
6	lisadennis29	12	Deborah Spadaro	11	Andrew Wilhelmi	9
7	Dell McCaslin	12	Andrew Willhelmi	11	LindaWolf96	8
8	Tammy Staley	11	BrBraden	10		
9	ellizann	10	cariena25	10		
10	Andrew Wilhelmi	9	Rex Gilbert	10		
11	fifeandcat	9	C.K.	9		
12	J.M.	8	Estes_Rena	9		
13	Geneva Amburgey	8	Cid1956	9		
14	kevin_stevens_55	8				
15	hill333	8				

The names in the table are the DNA match's public domain user name on Ancestry.

The distribution of these results is significant in that some of these distant cousins in the USA are DNA matches to 2, and in one case all 3, of their distant cousins in England, but most matches are just one to one. This is important as it shows not only the variety of the DNA samples, but also consistency in that one USA DNA sample can match more than one England DNA sample. This proves the results are not just coincidence; instead the results show the expected 'random distribution' of DNA as passed on from parents to their different children. Of particular note is the match of Andrew Wilhelmi to Terry, Norman and Brian. Terry's match to his paternal uncle is obviously via his grandfather, so effectively a 4 generation 'band' of English DNA is a match to Andrew. Andrew Wilhelmi has a tree on Ancestry going back to a Roger Dewey b1785. On WikiTree he is Dewey-1925, and according to WikiTree Roger goes back to Thomas Dewey b1640, a son of TDTS. This interlinked set of DNA matches, on its own, must surely confirm the link between the 'Wiltshire Dewey' and the 'American Dewey' families?

3.2 Obviously the Dewey link is of most interest, however the Moore link is also very important. The reason is that any DNA matches with Moore descendants in the USA supports the theory that the Dewey trio of Terry, Norman and Brian are descended from a Most Recent Common Ancestor (MRCA) of a Moore and a Dewey. The Dorset England parish records strongly suggest that this couple are Thomas Dewey Snr and his wife Mary Moore; the extensive DNA evidence corroborates that this couple are the MRCA pair.

DNA matches with surname Moore and location Windsor CT in family tree:-

TMDGENES	cM	Norman Dewey	cM	Brian Dewey	cM
1 Kathleen Bouton	20	CHERYL LYNN HODGES	12	N.W.	13
2 N.W.	16	beenewhouse5	12	Basil kenneth Morris	11
3 Basil kenneth Morris	14	vprell	11	ARScott	11
4 RitaSnyder13	13	Basil kenneth Morris	9	clayton kreiger	10
5 Andrew Barlas	12			Susan Smith	10
6 clayton kreiger	11			Douglas Pierce	9
7 Melinda Kay Standridge	11			L Marie Rathbun	9
8 Douglas Pierce	11			J.C. (Female)	8
9 ARScott	10			J.C. (Male)	8
10 S.E.	10			Norman Newberry	8
11 Dottie Conklin Hill	10				
12 Michael Shepard	10				
13 Jonathan Hesskew	10				
14 Patrick Fitch	10				
15 F.C.	9				
16 Darryl Tucker	9				
17 dianasibille	9				
18 Jessica Martin	8				
19 R.U.	8				
20 rphprogen	8				
21 L Marie Rathbun	8				
22 CynthiaHCurtis	8				

For these searches, as with the searches in 3.1 above, there is a single individual (Basil kenneth Morris) who is a match to all three of Terry, Norman and Brian, which makes the DNA evidence much more robust. The tree on Ancestry associated with Basil has a link from Basil up to Tabitha Moore (b1722 at Hartford CT) and then on to Andrew Moore, and his father John Moore. Andrew married Sarah Phelps in 1671 at Windsor, her uncle is George Phelps, the step-father of TDTS's children. Also, John Moore is TDTS's uncle; this makes Andrew and Sarah distantly related (half 2C1R by marriage)

These records indicate that Andrew is not an outsider, he is part of the Moore/Dewey/Phelps community and John is the only credible candidate to be Andrew's father, which is corroborated by the three-way DNA match evidence.

It was expected that the endogamy effect would be less for Moore than for Dewey family, but the opposite was found. Specifically, the number of DNA hits for Terry with Dewey at Westfield is 15, and that for Moore at Windsor it is 22; this is out of a total of 29,000 5th or more distant cousins. However, marriages between Moore and other early settler families in Windsor were very common, in particular to the Drake, Loomis and Bissell families. An example of intermarrying within the Moore family is the marriage of Deborah Moore-1408 and Phineas Drake-499, as they are second cousins; John Moore is a great-grandfather to both Deborah and Phineas.

There is also a DNA boost of a different kind with regard to John Moore's descendants. There is evidence that John Moore is the younger brother (by 21 years) of Mary Moore (TDTS's mother), so from a DNA perspective he is a generation closer to his descendants than TDTS. Effectively John Moore will pass on twice as much Moore DNA as TDTS will pass on Dewey DNA.

3.3 As another validation of the DNA results, Terry carried out searches on other settlers, but this time focusing on those settlers probably **not** related to him; the expectation being that the searches for DNA hits should all come back with 'None Found'. The location of Westfield and Windsor, together with the other surnames mentioned in John Russell's will, i.e. Russell, Hyatt and Warham were used.

The results are that for Westfield there are no relevant matches for Russell, Hyatt nor Warham; for Windsor the result is the same, except for one potential hit, a DNA match to a 'Bonnie Fritz'; her tree goes back to Esther Warham b1664 in Windsor CT, who is likely to be a daughter of John Warham. So there may well be an indirect DNA link from Esther to a Dewey or a Moore. This would explain the match as the Warham, Dewey and Moore families were well known to one another in Dorset England prior to the Great Migration. Out of curiosity a search for matches was made on a nearby state, i.e. on Dewey and New Hampshire, and the result was no matches.

This lack of matches indicates that the distribution of specific early settlers' detectable DNA is not widely spread amongst the general population of the USA, it is restricted to specific surnames and places.

4. Conclusion: By using WikiTree's resources it has been possible to identify examples of intermarrying within early settler families of Windsor CT and Westfield MA. ISOGG suggests that this will create an endogamy effect whereby the DNA of descendants is 'boosted' such that they seem more closely related than they really are.

By tuning Ancestry's search tool and using it on the dataset of DNA matches for 3 closely related English individuals, over 30 matches to American individuals were found, most with evidence that they are descendants of early settlers TDTS or John Moore. Of particular importance, one Dewey and one Moore descendant were a match to all three of the English individuals. These strong DNA results show that the Most Recent Common Ancestor couple have to be about 8 to 10 generations back, with links down both the English and American lines; the only couple who meet the DNA evidence and paper records evidence, are Thomas Dewey Snr and his wife Mary Moore.